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DATA COLLECTION FOR NONELECTRONIC RELIABILITY HANDBOOK  
(NEDCO II)

Volume V, Section III, Failure Mode Distributions

William Yurkowsky

Hughes Aircraft Company

AD841110

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**RADC-TR- 68-114, Volume V  
Final Report**



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(NEDCO II)**

**Volume V, Section III, Failure Mode Distributions**

**William Yurkowsky**

**Hughes Aircraft Company**

**TECHNICAL REPORT NO. RADC-TR- 68-114  
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**Rome Air Development Center  
Air Force Systems Command  
Griffiss Air Force Base, New York**

### EXPLANATION OF NEDCO II DATA FORMAT

The computer printout of nonelectronic data is presented in three sections: Section I - Failure Rate Data, Section II - Stress Level Data/Part Number, and Section III - Failure Mode Distributions.

#### Format of Section I - FAILURE RATE DATA

PART CLASSIFICATION: Parts are classified by generic type, utilizing the first five digits of the IDEP code for part classification. In the NEDCO format, the first three digits of the IDEP code appear with the part type at the top of the page. The fourth and fifth digits of the IDEP code appear with the IDEP part descriptors and are intended as subheadings on each page. Consistent with the IDEP definition, "N.O.C." means "Not Otherwise Classified," in part class or subheading.

PART DESCRIPTION: Additional part descriptive information is presented in this field. The specific part name is listed here when the IDEP classification only groups several similar part types.

FUNCTIONAL APPLICATION: This field describes the subsystem or application in which the part is used. Also, certain operating conditions may appear in parentheses in this field. When the same letter used as a suffix on failure rate, upper 90% confidence limit, and part-hours may have more than one meaning (e.g., M = MISSIONS or M = MILES), its meaning for that line item of data is explained in this field.

ENVIRONMENT: The operating environment is given by the following abbreviations:

LAB = LABORATORY  
GRD = GROUND  
GRD FXD = GROUND, FIXED  
GRD MOB = GROUND, MOBILE  
GRD PORT = GROUND, PORTABLE  
SHP = SHIPBOARD  
SUB = SUBMARINE  
SAT = SATELLITE  
AIR = AIRCRAFT  
AIR CB = AIRCRAFT, CARRIER BASED  
AIR LB = AIRCRAFT, LAND BASED  
MSL = MISSILE  
GEN = GENERAL  
LIFE, LAB = LIFE TEST, LABORATORY  
LIFE, ACC = LIFE TEST, ACCELERATED  
ACCEPT TEST = ACCEPTANCE TEST  
STOR = STORAGE  
AIR GRD = AIR, GROUND  
AIR SHP GRD = AIR, SHIP, GROUND  
HELI = HELICOPTER  
QUAL TEST = QUALIFICATION AND EVALUATION TEST

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SIM GRD = SIMULATED GROUND  
 SIM SHP = SIMULATED SHIPBOARD  
 SIM SUB = SIMULATED SUBMARINE  
 SIM SAT = SIMULATED SATELLITE  
 SIM MSL = SIMULATED MISSILE  
 SIM HELI = SIMULATED HELICOPTER  
 SIM AIR = SIMULATED AIRCRAFT  
 GRD SHP = GROUND, SHIP  
 RR = RAILROAD  
 SIM GRD AIR = SIMULATED GROUND, AIR

**FAILURE RATE:** Failures per million operating hours are given unless the failure rate is suffixed by a letter. The letter indicates that the failure rate is expressed in failures per million units explained either in the FUNCTIONAL APPLICATION field or as follows:

A = Actuations  
 C = Cycles  
 R = Rounds  
 P = Premature removals per million hours

An asterisk (\*) indicates 0 failures.

**UPPER 90% CONFIDENCE LIMIT:** The upper one-sided 90% confidence limit is given in the units of the failure rate. Letters in suffix relate to units as in the FAILURE RATE field.

**PART POPULATION:** Total number of parts under observation are given in this field.

**PART-HOURS:** This field indicates total test time in millions of part-hours unless there is a letter in suffix. The letter is of the same code as the FAILURE RATE field.

**YEAR OF REPORT:** This date is the one appearing with the originator's data contribution and may represent either the date the data was generated or the date it was published.

**DATA SOURCE:** This field is a coded indication of the source of the data (see MEDCO II Source List), and is intended for RADC use only.

**CROSS INDEX REFERENCE NUMBER:** This number relates the failure rate data in Section I to the stress and failure mode information in Sections II and III. The suffix "A" on a number means that there exists supplemental information for the entry in Section II.

**Format of Section II - STRESS LEVEL DATA/PART NUMBER**

**CROSS INDEX REFERENCE NUMBERS:** This number relates to the failure rate data in Section I.

MILITARY STANDARD PART NUMBER/FEDERAL STOCK NUMBER: The number provided may be a Military Standard part number or a federal stock number.

PERCENT OF RATED VOLTAGE: The number indicated is the percent of the vendor-rated voltage at which the part was operated.

PERCENT OF RATED CURRENT: The number indicated is the percent of the vendor-rated current at which the part was operated.

PERCENT OF RATED POWER: The number indicated is the percent of the vendor-rated power at which the part was operated.

PERCENT OF RATED FREQUENCY: The number indicated is the percent of the vendor-rated frequency at which the part was operated.

PERCENT OF RATED PRESSURE: The number indicated is the percent of the vendor-rated pressure at which the part was operated.

TYPICAL TEMPERATURE: The number indicated is the ambient temperature of the part in degrees Centigrade which was experienced during operation.

HIGH TEMPERATURE: The number indicated is the greatest ambient temperature of the part in degrees Centigrade which was experienced during operation.

LOW TEMPERATURE: The number indicated is the lowest ambient temperature of the part in degrees Centigrade which was experienced during operation.

FREQUENCY OF SINUSOIDAL VIBRATION: The numbers indicated are an individual value or range of values for the frequency of sinusoidal vibration experienced by the part during operation. Values are presented in terms of cycles per second. The abbreviation K or M in this column indicates respectively kilocycles or megacycles.

INTENSITY OF SINUSOIDAL VIBRATION: The numbers indicated are an individual value or range of values for the intensity of sinusoidal vibration experienced by the part during operation. Values are presented in units of g (root-mean-square value).

INTENSITY OF RANDOM VIBRATION: The number indicated is the intensity of random vibration experienced by the part during operation. Values are presented in terms of the unit  $g^2$  per cycle per second.

ACOUSTICAL VIBRATION: The number indicated is the intensity of acoustical vibration experienced by the part during operation. Values are presented in terms of decibels.

MAXIMUM INTENSITY OF SHOCK: The number indicated is the maximum intensity of shock experienced by the part during operation. Values are presented in units of g.

DURATION OF SHOCK: The number indicated is the average duration of individual shock blows experienced by the part during operation. Values are presented in terms of milliseconds.

SHOCK BLOWS PER HOUR: The number indicated is the average number of shock blows per hour experienced during operation.

TYPICAL PRESSURE: The number indicated is the typical barometric pressure experienced by the part during operation. Values are presented in terms of pounds per square inch absolute.

PRESSURE RANGE: The numbers indicated are the range of barometric pressures experienced by the part during operation. Values are presented in terms of pounds per square inch absolute.

TYPICAL RELATIVE HUMIDITY: The number indicated is the typical relative humidity in percent experienced by the part during operation.

RANGE OF RELATIVE HUMIDITY: The numbers indicated are the range of relative humidity in percent experienced by the part during operation.

#### **Format of Section III - FAILURE MODE DISTRIBUTIONS**

CROSS INDEX REFERENCE NUMBER: This number relates to the failure rate data in Section I. A missing cross index reference number indicates that failure rate information is unknown for that line entry.

FAILURE MODES BY PERCENT OF TOTAL FAILURES: The percent of the total number of failures attributed to a particular failure mode is given under a numerical heading in parentheses. The heading number corresponds to a numbered list of possible failure modes given at the beginning of the page(s) for each separate part type.



BOMC AIR DEVELOPMENT CENTER, GRIFFIN, ALA. N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PAGE CLASS ACCELEROMETERS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) OPEN
- (2) DRIFT
- (3) UNSTABLE
- (4) RING
- (5) ERRATIC
- (6) LEAKING
- (7) OUT OF TOLERANCE
- (8) FAULTY WIPEN
- (9) FAULTY PUTENTIONETER
- (10) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)
00098000	3	-	-	-	-	67	-	-	-	-	33
00120000	1427	-	-	-	-	43	32	17	0	-	-

# SEMICONDUCTOR PART FAILURE RATE DATA

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### FAILURE MODES (4 DEB)

**(2) OUT OF TOLERANCE**

(5) SHORTED  
(5) SHORTED

**(U) DAMAGED**

**SYNOPSIS**

1579

NO. OF  
FAILURES (01 1031 10

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HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1948  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      ANTENNAS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

(1) SHORTED	
(2) INTERMITTENT	
(3) CRACKED	
(4) LOW OUTPUT	
(5) MECHANICAL FINDING	
(6) BENT	
(7) DISTORTED	
(8) BROKEN	
(9) DETERIORATION	
(10) UNKNOWN	

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)
REF. NO.	FAILURES										
03084000	3	33	67	-	-	-	-	-	-	-	-
03086000	3	-	-	67	33	-	-	-	-	-	-
03332000	-	-	-	-	-	-	-	-	-	-	-
03344000	10	-	-	20	-	-	20	20	20	-	20
	1	-	-	-	-	100	-	-	-	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1960  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      AXLES

FAILURE MODES TO DENOTES PREDOMINANT FAILURE MODES

- (1) CHAFED
- (2) DISTORTED
- (3) EXCESSIVE

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.      FAILURES(01) (02) (03)  
33394000      9      70      11      11

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      MAGS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)  
(1) PUNCTURED

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX      NO. OF  
REF. NO.      FAILURES(1)  
03494000      -      \*

ROME AIR DEVELOPMENT CENTER, CALIFFISS AFB, M.V. JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS BEARINGS

FAILURE MODES 10 DENOTES PREDOMINANT FAILURE MODE

- (1) EXCESSIVE WEAR
- (2) MECHANICAL BINDING
- (3) STICKING
- (4) BENT
- (5) JAMMED
- (6) PITTED
- (7) FRICTION EXCESSIVE
- (8) EXCESSIVE VIBRATION
- (9) CHATTERING
- (10) FROZEN
- (11) CLOGGED
- (12) SCORED
- (13) BENT
- (14) CRACKED
- (15) WEARING FAILURE
- (16) LACK OF LUBRICANT
- (17) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
	304	31	7	3	1	1	2	5	2	1	1	1	-	-	-	-	-	-
04150000	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
04152000	3	-	-	-	-	-	-	-	-	-	-	-	50	8	-	-	-	-
03976000	-	6	-	-	-	-	-	-	-	-	-	-	67	33	-	-	-	-



BUREAU OF DEVELOPMENT CENTER, CRIPPS AFB, D.V. ELECTRONIC PART FAILURE DATA JANUARY 1969  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS NAMES

FAILURE MODES (9 DETECTED PREDOMINANT FAILURE MODE)

- (1) BONDING FAILURE
- (2) SURFACE DAMAGE

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX NO. OF  
 REF. NO. FAILURE(S) (1) (2)  
 05432000 - 0  
 05446000 - 0



SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SHARES

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) EXCESSIVE HEAT
- (2) LEAKAGE
- (3) SCORCH
- (4) BURNED OUT
- (5) OVERHEATED
- (6) BROKEN/DAMAGED
- (7) EXCESSIVE FRICTION
- (8) IMPROPER OPERATION
- (9) UNKNOWN

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURE MODES (01) (02) (03) (04) (05) (06) (07) (08) (09) (10)
04504000	66 21 - - - - - 41 17 6 - 9
04558000	2122 46 22 10 - - - - - 22
04568000	- 0 - - - - - - - - -
04458000	- - 0 - - - - - - - -
04568000	- 15 74 - - - 5 4 2

NAME: ADA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      HOMELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III: FAILURE MODE DISTRIBUTIONS

PART CLASS: MISSES

FAILURE MODES (0) DENOTES PREDOMINANT FAILURE MODE:  
 (1) CHIPPED/CRACKED  
 (2) LOW OUTPUT  
 (3) WORN  
 (4) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
22212003	6	33	33	17	17	

PART CLASS		CABLES	
FAILURE MODE		10 DENOTES PREDOMINANT FAILURE MODE	
(1) BROKEN			
(2) FRAYED			
(3) SHORT			
(4) CRACKED			
(5) ARCING			
(6) WORN EXCESSIVELY			
(7) CHAFED			
(8) OPEN			
(9) CLOSED			
(10) UNKNOWN			

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES									
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)
39	14	2	8	2	26	18	2	11	2	15	
7	100	-	-	-	-	-	-	-	-	-	-
68966000	-	-	8	-	-	-	-	-	-	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      HOMELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      MANUPTIES

FAILURE MODES (\*) DENOTES PREDOMINANT FAILURE MODES

(1) CRACKED, CRAZED, SCRATCHED

(2) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES (1)	(2)
57	95	5

ROME AIR DEVELOPMENT CENTER, GRAFESS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1964  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS CARTRIDGES

FAILURE MODES (+ DEMOTES PREDOMINANT FAILURE MODE)

- (1) SQUIN FAILURE TO FIRE
- (2) CASE FAILURE UPON FIRING
- (3) FIRING FORCE BELOW NORMAL
- (4) CONTINUITY AND RESISTANCE IMPROPER

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF FAILURES	(01)	(02)	(03)	(04)
REF. NO. 20704000	20	40	25	30	5

NAME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      CELLS

FAILURE MODES (+ DEMOTES PREDOMINANT FAILURE MODE)

(1) LEAKING

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES  
REF. NO.      FAILURES(01)

MONSIEUR AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS  
NONELECTRONIC PART FAILURE RATE DATA JANUARY 1969

### SECTION III. FAILURE MODE DISTRIBUTIONS

PART CLASS	COUNTS				
		FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)			
(1) BROKEN					
(2) CRACKED					
(3) UNKNOWN					
		FAILURE MODES BY PERCENT OF TOTAL FAILURES			
GROSS INDEX	NO. OF				
REF.NO.	FAILURES(01)	(02)	(03)		
	6	67	-	33	
	7	28	72	-	

ADME AIA DEVELOPMENT CENTER, CAIFFISS AFB, N.Y. JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS SWITCH-BREAKERS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) ARC
- (2) SHORT
- (3) OPEN
- (4) UNSTABLE
- (5) LEAK

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES (1)	(2)	(3)	(4)	(5)
-	10	15	40	25	10
-	8	19	54	19	2
-	-	50	25	25	-
-	-	64	31	6	-





ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE DATE DATA

PART CLASS LAMPS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)  
 (A) CRACKED

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX NO. OF  
 REF. NO. FAILURES (01)  
 20806000

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1966

PART CLASS 44555

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)  
(1) MECHANICAL BINDING  
(2) INTERMITTENT  
(3) BROKEN  
(4) JAMMED

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES			
REF. NO.	FAILURES	(0)	(2)	(3)	(4)
31224001	39	36	13	0	0
31252000	39	36	13	0	0

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1969  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS CLUTCHES

FAILURE MODES (1) DENOTES PREDOMINANT FAILURE MODE

- (1) WEAR
- (2) JAMMED
- (3) SLIPPAGE

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES (01) (02) (03)
REF. NO.		
	6	67 17 16

PART CLASS

WALLS

FAILURE MODES (2 DENOTES PREDOMINANT FAILURE MODE)

- (1) SHORT
- (2) OPEN
- (3) INTERMITTENT
- (4) CRACK
- (5) LOSS OF SENSITIVITY
- (6) LEAD BREAKAGE
- (7) DETUNING
- (8) IMPROPER DIELECTRIC PROPERTIES
- (9) LEAKING
- (10) UNKNOWN

CROSS INDEX

NO. OF

FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
06278000	2	-	-	-	-	-	-	-	-	-
137	5	39	-	42	-	-	-	-	-	14
39	3	5	14	20	-	-	-	-	-	51
-	-	-	-	24	30	8	14	16	-	-

BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1969  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS		COMPASSES									
		FAILURE MODES (* DENOTES PREDOMINANT FAILURE MODE)									
		(1) BROKEN	(2) OUT OF TOLERANCE	(3) DISCOLORED	(4) ERRATIC	(5) BURNED OUT	(6) UNSTABLE-BINDING	(7) LEAKING	(8) INOPERATIVE	(9) UNKNOWN	
CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES									
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	
	356	-	-	-	-	-	33	21	14	32	
31024000	48	50	29	2	11	2	-	-	-	6	

HOME AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. - NONELECTRONIC PART FAILURE RATE DATA - JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS COMPENSATORS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) ERRATIC
- (4) OUT OF TOLERANCE
- (3) SHORTED
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES	PERCENT OF TOTAL FAILURES
REF. NO.	FAILURES	(01) (02) (03) (04)	
15	33	7	21

PART CLASS COMPUTERS

FAILURE MODES (6 GENOTES PREDOMINANT FAILURE MODE)

- (1) MECHANICAL BINDING
- (2) OUT OF TOLERANCE
- (3) ERRATIC
- (4) SHORTED
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF					
REF. NO.	FAILURES	(1)	(2)	(3)	(4)	(5)
53	20	11	6	6	6	57

ROME AIR DEVELOPMENT CENTER, GRIFPLS ASD, N.Y. WHELECTRONIC PART FAILURE RATE DATA JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS CONNECTIONS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)  
 (1) OPEN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF. NO.	FAILURES(1)	
	2	100



**JANUARY 1965**

# FAILURE MODES (♦ DEMOTES PREDOMINANT FAILURE MODE)

- (11) SHORT
- (12) OPEN
- (13) INTERMITTENT
- (14) MECHANICAL DAMAGE
- (15) EXCESSIVE CONTACT RESISTANCE
- (16) IMPROPER INSULATION RESISTANCE
- (17) WINDING
- (18) CORRUGED
- (19) CONTACTS DEFECTIVE
- (10) ARCING
- (11) MORN EXCESSIVELY
- (12) LEAKAGE
- (13) CLOGGED
- (14) ELECTRICALLY WEAK
- (15) CHANGED
- (16) UNKNOWN

[illegible]

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1968  
 SECTION III FAILURE MODE DISTINCTIONS HOMELECTRONIC PART FAILURE RATE DATA

PART CLASS CONTACTERS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) ERATIC
- (2) OFF FREQUENCY
- (3) INTERMITTENT
- (4) OUTPUT-INCORRECT
- (5) SHORTED
- (6) MECHANICAL BINDING
- (7) OUT OF TOLERANCE
- (8) LEAKING
- (9) EXCESSIVE WEAR
- (10) OPEN
- (11) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES									
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)
09764000	20	30	20	10	10	5	-	-	-	-	25
	43	-	-	-	-	-	-	13	-	11	16
09690000	33	6	-	-	9	5	33	6	-	-	43
09706000	10	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	50	-	-	50

BUWU AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1948  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS		FAILURE MODES (* DENOTES PREDOMINANT FAILURE MODE)													
CONTROLS															
		FAILURE MODES (* DENOTES PREDOMINANT FAILURE MODE)													
		(1) POOR REGULATION	(2) SHORTED	(3) OPEN	(4) INTERMITTENT	(5) BURNED OUT	(6) MECHANICAL BINDING	(7) PHYSICAL DAMAGE	(8) ELECTRICAL	(9) ERRATIC OPERATION	(10) OUT OF ADJUSTMENT	(11) INCORRECT OUTPUT	(12) UNSTABLE	(13) CONTAMINATION	(14) UNKNOWN
CROSS INDEX	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)
27	09284000	29	24	7	3	-	-	-	-	-	-	-	-	-	66
	09264000	14	-	6	-	-	-	-	-	19	-	37	-	-	38
	09322000	193	12	-	1	9	3	1	1	-	-	-	-	-	73
	09218000	2	-	-	-	-	-	-	100	-	-	-	-	-	-
	09280000	24	-	8	-	-	8	-	-	-	4	9	-	-	71
	10190000	52	-	6	-	17	-	-	-	-	-	13	-	-	64
		10	-	10	-	10	-	-	-	-	-	-	10	-	70
	10718000	32	-	-	-	9	3	-	-	-	-	19	-	-	69

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS CONVERTERS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) SHORT
- (2) LEAKING
- (3) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CRUSS INDEX REF. NO.	NO. OF FAILURES(01)	(02)	(03)
61	3	54	43

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NON-ELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION 111      FAILURE MODE DISTRIBUTIONS

PART CLASS      LOWERS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

(1) LEAKING  
 (2) STRUCTURAL

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE(S)	(1)	(2)
REF. NO.				
1131600	11	73	27	
	4	100		

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      HOMELECTRONIC PART FAILURE RATE DATA      JANUARY 1969  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      COUNTERS

FAILURE MODES TO DEMONSTRATE PREDOMINANT FAILURE MODES  
(1) UNSTABLE

CROSS INDEX REF. NO.	NO. OF FAILURES(1)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
2	100	

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NENELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      COUPLERS/COUPLINGS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) EXCESSIVE WEAR
- (2) GASSY
- (3) ARCING
- (4) BROKEN
- (5) BURNED OUT
- (6) DEFORMED
- (7) OLD AGE
- (8) LOOSE

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
3433000	21	30	15	10	20	5	10	5	5

ADOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1969  
 SECTION III - FAILURE MODE DISTRIBUTIONS  
 PART CLASS - CYLINDERS

FAILURE MODES 19 MEMOES PREDOMINANT FAILURE MODES

- (1) LEAKING
- (2) MECHANICAL DAMAGE
- (3) OUT OF TOLERANCE
- (4) BROKEN
- (5) BROKEN OR CRACKED
- (6) CRACKED
- (7) INCORRECT OUTPUT PRESSURE
- (8) STRUCTURAL FAILURE
- (9) MECHANICAL
- (10) ELECTRICAL
- (11) WEAR OR AGING EFFECT
- (12) UNKNOWN

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
REF. NO.	FAILURES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
11954000	105	99	-	-	-	-	-	-	-	-	-	-	-
12049000	11	64	-	-	-	-	-	-	-	-	-	-	-
	2	50	-	-	-	-	-	-	-	-	-	-	-
	359	-	48	-	-	-	-	-	-	-	-	-	-
	24	-	9	-	-	-	-	-	-	-	-	-	-
	100	-	11	-	-	-	-	-	-	-	-	-	-
12119000	5	40	20	-	-	-	-	-	-	-	-	-	-
11946000	21	90	-	-	-	-	-	-	-	-	-	-	-
12020000	16	7	25	-	-	-	-	-	-	-	-	-	-
	72	-	30	-	-	-	-	-	-	-	-	-	-
	275	59	-	4	24	-	-	-	-	-	-	-	-
	395	53	-	9	-	-	-	-	-	-	-	-	-
	6	33	-	34	-	-	-	-	-	-	-	-	-
12090000	207	59	-	4	-	14	-	-	-	-	-	-	-
	88	59	-	-	-	-	-	-	-	-	-	-	-
12094000	352	-	-	-	39	-	-	-	-	-	-	-	-
	169	12	-	-	-	-	-	-	-	-	-	-	-
	119	27	-	6	-	-	-	-	-	-	-	-	-
	404	37	-	24	-	-	-	-	-	-	-	-	-
	364	-	-	14	-	-	-	-	-	-	-	-	-
	139	65	-	-	-	-	-	-	-	-	-	-	-
	184	70	-	-	-	-	-	-	-	-	-	-	-
12070000	157	50	-	17	-	-	-	-	-	-	-	-	-
	73	-	73	-	-	-	-	-	-	-	-	-	-
	14	36	-	-	-	-	-	-	-	-	-	-	-
	10	80	-	-	50	-	-	-	-	-	-	-	-
	510	-	-	-	-	-	-	-	-	-	-	-	-
12234000	12	25	-	-	-	-	-	-	-	-	-	-	-
12059000	3	100	-	-	-	-	-	-	-	-	-	-	-



ROME AIR DEVELOPMENT CENTER, GAITHERSBURG, M.D.      NON-ELECTRONIC PART FAILURE RATE DATA      JANUARY 1962  
 SECTION 111      FAILURE MODE DISTRIBUTIONS

PART CLASS      PART NO.

FAILURE MODES (10 DENOTES PREDOMINANT FAILURE MODE)

- (1) LEAKING
- (2) CRACKED
- (3) OUT OF TOLERANCE
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES (1)	(2)	(3)	(4)	(5)
REF. NO.	FAILURES	(1)	(2)	(3)	(4)	(5)
12294000	215	-	-	-	-	0
	63	35	32	3	-	30
12346000	-	0	-	-	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1969

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS DEFECTORS

FAILURE MODES 10 REMOTES PREDOMINANT FAILURE MODES

- (1) BURNED OUT
- (2) SHORTED
- (3) PICKUP ONSTRUCTED
- (4) PICKUP BROKEN
- (5) INTERMITTENT
- (6) STICKING
- (7) JAKKEN
- (8) LOW RESISTANCE
- (9) HIGH RESISTANCE
- (10) PHYSICAL DAMAGE
- (11) INSULATION BREAKDOWN
- (12) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES (01)	FAILURE MODES BY PERCENT OF TOTAL FAILURES										
		(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)
29728000	25	0	4	4	-	-	-	-	-	-	-	68
29708000	14	-	7	-	7	7	7	-	-	-	-	72
29710000	76	-	9	-	6	-	50	3	20	4	9	-

0

0

0

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS DISCONNECTS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

(1) BROKEN

(2) DISTORTED

(3) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	
REF. NO.	FAILURES(01)	(02) (03)
1648000	11	36 18 50

RUMBLE AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NON-ELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION 111      FAILURE MODE DISTRIBUTIONS

PART CLASS      NAMES

FAILURE MODES TO DEMONSTRATE PREDOMINANT FAILURE MODES

- (1) CRACKED
- (2) BROKEN
- (3) UNKNOWN

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES  
REF. NO.      FAILURES (01) (02) (03)

10      41      29      30

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS	HOURS	FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)										FAILURE MODES BY PERCENT OF TOTAL FAILURES									
CROSS INDEX REF.NO.	NO.OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)		
		11	11	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		4	25	75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		24	-	-	-	75	25	-	-	-	-	-	-	-	-	-	-	-	-		
13012000		12	-	90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		30	-	43	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		29	-	41	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
		22	36	27	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12976000		52	-	50	-	-	-	-	-	23	27	-	-	-	-	-	-	-	-		
		15	-	92	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
12418000		-	-	-	50	50	-	-	-	-	-	-	-	-	-	-	-	-	-		
13222000		-	-	50	25	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
13246000		-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS WWTs

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

(1) CRACKED

(2) BROKEN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

GROSS INDEX	NO. OF	FAILURE MODES (1) (2)
WLF-MG.		
13946000	4	- 100
13820000	-	0
13750000	2	100

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

**PART CLASS ELDOMS**

**FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)**

(1) LEAKAGE

**(2) CRACKED**

### FAILURE NGOS BY PERCENT OF TOTAL FAILURES

[illegible]

REF. NO. FAILURE(01) (02)

6 67 33

ROME AIR DEVELOPMENT CENTER, GRIFPSS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS EXPANDERS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) OVERSPEED
- (2) BEARING FAILURE
- (3) NOISY BEARING
- (4) MECHANICAL BINDING AND/OR FROZEN
- (5) UNSTABLE OPERATION
- (6) STRUCTURAL FAILURE
- (7) OUT OF BALANCE
- (8) LEAKING
- (9) END PLAY EXCESSIVE
- (10) OUTPUT LOW
- (11) WORN EXCESSIVELY
- (12) VIBRATION EXCESSIVE
- (13) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
116	7	4	5	21	14	1	1	1	1	1	1	1	1	1
88	2	6	5	17	5	18	3	1	1	1	1	1	1	1



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. MODEL-CITRONIC PART FAILURE RATE DATA JANUARY, 1968  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS	FAILINGS
	FAILURE MODES (10 DEMOTES PREDOMINANT FAILURE MODE)
	(11) CRACKED
	(12) MECHANICAL DAMAGE
	(13) CHAFED
	(14) TURN LOOSE FROM ATTACHMENT
	(15) DISTORTED
	(16) CORRODED
	(17) BROKEN OR CRACKED
	(18) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES					
REF. NO.	FAILURES (01)	(02)	(03)	(04)	(05)	(06)	(07) (08)
	42	-	-	-	-	74	26
	3	34	-	-	33	-	-
15194000	3	67	-	-	-	-	-
	8	50	13	12	12	-	-
	56	48	32	-	-	-	20

HOME AIR DEVELOPMENT CENTER, GRANTISS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

SECTION 1.1 FAILURE MODE DISTRIBUTIONS

PART CLASS FANS

FAILURE MODES (9 DENIES PREDOMINANT FAILURE MODES)

- (1) BURNED OUT
- (2) FROZEN SHAFT

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO. 05468000

05342000

ARMED AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

### SECTION III FAILURE MODE DISTRIBUTIONS

**PART CLASS ALTERS**

**FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)**

- (11) LEAKING  
(12) CRACKED OR BROKEN  
(13) OUT OF TOLERANCE  
(14) BROKEN  
(15) EXCESSIVE WEAR  
(16) CRACKED  
(17) CLOGGED  
(18) RUSTY  
(19) WARPEN  
(20) DAMAGED-NISHANOLI  
(21) STRUCTURAL FAILURE  
(22) BUBBLE TEST  
(23) UNKNOWN

[illegible]

BOMB AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
 SECTION 111 FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE DATA

JANUARY 1968

PART CLASS FMS

FAILURE MODES 10 DENIES PREDOMINANT FAILURE MODES

- (1) CRACKED
- (2) DISTORTED
- (3) BROKEN
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF				
REF. NO.	FAILURES	(01)	(02)	(03)	(04)
15974000	58	39	17	17	28
15976000	61	35	14	14	37



ROME AIR DEVELOPMENT CENTER, GRAFESS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

## **PART CLASS FITTINGS**

## FAILURE MODES (• DENOTES PREDOMINANT FAILURE MODE)

- |                       |                             |
|-----------------------|-----------------------------|
| (11) BROKEN           | (16) CRACKED OR DISTORTED   |
| (12) CRACKED          | (17) CRACKED OR BROKEN      |
| (13) EXCESSIVE WEAR   | (18) DISTORTED              |
| (14) OUT OF TOLERANCE | (19) LEAKING                |
| (15) SCORED           | (20) PHYSICAL DETERIORATION |
|                       | (21) WARPED                 |
|                       | (22) UNKNOWN                |

[illegible]

ADME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION 113 FAILURE MODE DISTRIBUTIONS

PART CLASS FLAPS

FAILURE MODES 10 DENOTES PREDOMINANT FAILURE MODES

- (1) BROKEN
- (2) DISTORTED
- (3) CORRODED
- (4) CRACKED
- (5) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
		33	33	21	15	9	



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1960  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      FLAKES

FAILURE MODES (• DENOTES PREDOMINANT FAILURE MODE)  
(1) BURST

CROSS IND-X      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.      FAILURE(S)      1      100  
50116000

7

RUWE AIR DEVELOPMENT CENTER, GRIFPLS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS FUSELASSES

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) CRACKED

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURES(0) (02)
REF. NO.		
10104000	-	0
10120000	-	0



RUMBLE AIA DEVELOPMENT CENTER, GRIFFIS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS FUSES

FAILURE MODES (4 DENOTES PREDOMINANT FAILURE MODE)  
 (1) INTERRUPTING TIME EXCEEDS SPECS  
 (2) PREMATURE OPEN  
 (3) INTERRUPTING CURRENT EXCEEDS SPECS

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF. NO.	FAILURES (01) (02) (03)	
-	75 10 15	

## PART CLASS NOTES

**FAILURE MODES (0 = QUANTITIES PREDOMINANT FAILURE MODE)**

- (1) LEAKING
- (2) INTERMITTENT/FLUCTUATING
- (3) READING HIGH
- (4) PHYSICAL DAMAGE/ABOVE-N/CRAKED
- (5) MECHANICAL BINDING
- (6) OUT OF TOLERANCE

- (17) ARS  
(18) LAM  
(19) ARS  
(20) LAM

- (141) DRIFT  
(142) NO INDICATION  
(143) IMPROPER ADJUSTMENT  
(144) MECHANICAL DAMAGE  
(145) RUPTURED BELLONS  
(146) MECHANICAL INTERFERENCE  
(147) UNKNOWN

3. CROSS INDEX NO. OF

[illegible]

BOMC AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS NOMELECTRONIC PART FAILURE RATE DATA

PART CLASS GEAR-BOXES

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

(1) LEAKING
(2) MATERIAL FAILURE
(3) MECHANICAL BINDING
(4) CORROSION
(5) SEAL LEAKS
(6) CONTAMINATION
(7) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES						
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)
33736000	3	33	-	-	-	-	-	67
33754000	-	0	-	-	-	0	-	-
33760000	-	-	-	-	-	0	-	-
33804000	-	-	-	-	-	0	-	-
33754000	-	-	-	-	-	0	-	-
33780000	0	-	100	-	-	-	-	-
33742000	1	100	-	-	-	-	-	-
33800000	-	-	-	-	-	-	0	-
33794000	-	-	-	-	-	0	-	-
33760000	11	-	10	82	-	-	-	-

ROWE AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      GEARS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) NOISY
- (2) WORN EXCESSIVELY
- (3) BINDING
- (4) BROKEN
- (5) JAMMED
- (6) SLIPPAGE
- (7) STRIPPER
- (8) UNKNOWN

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
26	4	54	6	8	7	4	11	4

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS GENERATORS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) EXCESSIVE WEAR
- (2) INOPERATIVE
- (3) CONTAMINATION
- (4) WINDING SHORTED OR OPEN
- (5) SEALS LEAKING
- (6) ARMATURE BINDING OR BENT
- (7) BROKEN
- (8) OUT OF TOLERANCE
- (9) SHORTED
- (10) BEARING FAILURE
- (11) NO OUTPUT
- (12) BURNED OUT
- (13) OUTPUT LOW
- (14) FROZEN
- (15) SHEARED
- (16) HIGH OUTPUT
- (17) FLUCTUATES
- (18) INTERNAL PART FAILURE
- (19) INTERMITTENT OPERATION
- (20) IMPROPER ADJUSTMENT/OPERATION
- (21) UNKNOWN

CROSS INDEX REF.NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																				
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
	190	28	19	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	43
	5	-	-	-	-	-	-	-	-	-	40	20	-	-	-	-	-	-	-	-	-	40
	191	69	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11
	94	-	-	-	-	-	-	-	-	-	7	-	9	4	9	-	-	-	-	-	-	71
37166000	44	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
	48	15	-	-	60	26	7	5	-	-	-	-	-	-	-	-	-	-	-	-	-	40
36998000	20	-	-	-	-	-	-	-	10	35	-	-	-	-	-	-	-	-	-	-	-	2
37436000	-	-	-	-	-	-	-	-	10	-	-	15	-	5	-	25	10	10	-	-	-	-
37458000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
37276000	-	42	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	3	8	3

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      GRIPS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) OUT OF TOLERANCE
- (3) UNKNOWN

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES(01)	(02)	(03)
61	26	26	48

JANUARY 1968

NON-ELECTRONIC PART FAILURE RATE DATA

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS GUNS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) OUT OF TOLERANCE
- (2) DISTORTED
- (3) CONTAMINATED
- (4) CRACKED
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF					
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)
24	54	4	-	-	-	42
3	-	-	67	33	-	-

**JANUARY 1968**

## CONCLUSIONS

# FAILURE MODES (\* DENTIES PREDOMINANT FAILURE MODE)

- (17) UNKNOWN**

[illegible]



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART	CLASS	HARNESSES
1	2	3
4	5	6
7	8	9
10	11	12
13	14	15
16	17	18
19	20	21
22	23	24
25	26	27
28	29	30
31	32	33
34	35	36
37	38	39
40	41	42
43	44	45
46	47	48
49	50	51
52	53	54
55	56	57
58	59	60
61	62	63
64	65	66
67	68	69
70	71	72
73	74	75
76	77	78
79	80	81
82	83	84
85	86	87
88	89	90
91	92	93
94	95	96
97	98	99
100	101	102
103	104	105
106	107	108
109	110	111
112	113	114
115	116	117
118	119	120
121	122	123
124	125	126
127	128	129
130	131	132
133	134	135
136	137	138
139	140	141
142	143	144
145	146	147
148	149	150
151	152	153
154	155	156
157	158	159
160	161	162
163	164	165
166	167	168
169	170	171
172	173	174
175	176	177
178	179	180
181	182	183
184	185	186
187	188	189
190	191	192
193	194	195
196	197	198
199	200	201
202	203	204
205	206	207
208	209	210
211	212	213
214	215	216
217	218	219
220	221	222
223	224	225
226	227	228
229	230	231
232	233	234
235	236	237
238	239	240
241	242	243
244	245	246
247	248	249
250	251	252
253	254	255
256	257	258
259	260	261
262	263	264
265	266	267
268	269	270
271	272	273
274	275	276
277	278	279
280	281	282
283	284	285
286	287	288
289	290	291
292	293	294
295	296	297
298	299	300
301	302	303
304	305	306
307	308	309
310	311	312
313	314	315
316	317	318
319	320	321
322	323	324
325	326	327
328	329	330
331	332	333
334	335	336
337	338	339
340	341	342
343	344	345
346	347	348
349	350	351
352	353	354
355	356	357
358	359	360
361	362	363
364	365	366
367		

**FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)**

(1) DAMAGED	(2) SHORTED

### FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO.OF
REF.NO.	FAILURES(01) (02)
	8 88 12

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      HEADS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) INCORRECT REGULATION
- (2) LEAKING
- (3) MECHANICAL BINDING
- (4) DEFORMED
- (5) PHYSICAL DETEIORATION
- (6) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES					
REF.NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)
63	21	13	3	9	5	49	

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS HEAT-EXCHANGERS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) LEAKING
- (2) DISCOLORED
- (3) CRACKED
- (4) BROKEN
- (5) SCORED
- (6) TEMPERATURE OUT OF LIMITS
- (7) OBSTRUCTED
- (8) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF.NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
6	80	-	-	-	-	-	-	20	-
53	26	11	23	-	-	-	-	-	40
49	39	-	-	-	11	8	-	-	42
14	40	-	-	-	20	-	20	-	20
-	*	-	-	-	-	-	-	-	-

JANUARY 1968

NONELECTRONIC PART FAILURE RATE DATA

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS HANGES

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

(1) DAMAGED

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX NO. OF  
REF. NO. FAILURES(1)  
21438000 1 100

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS HOURS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) EXCESSIVE WEAR
- (2) SURFACE CRACKED
- (3) SCORED
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF FAILURES	(01)	(02)	(03)	(04)
REF. NO.					
21558000	48	75	15	10	-
	34	71	15	12	2

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS    HUSES

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) CRACKED
- (3) LEAKING
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES			
REF. NO.	FAILURES	(01)	(02)	(03)	(04)
112	90	6	-	-	4
25	48	12	20	20	20

JANUARY 1968

NON-ELECTRONIC PART FAILURE RATE DATA

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS MALINGS

FAILURE MODES (% DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) BENT
- (3) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX NO. OF  
REF. NO. FAILURES (1) (2) (3)  
2398000 8 62 13 25

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE RATE DISTRIBUTIONS

PART CLASS INDICATORS

FAILURE MODES (10) CATEGORIES, PREDOMINANT FAILURE MODES

- (11) OUT OF TOLERANCE
- (12) MECHANICAL BINDING
- (13) LEAKING
- (14) OPEN
- (15) SHORTED
- (16) ERATIC/UNSTABLE
- (17) PHYSICAL DAMAGE/BROKEN/CRACKED/BENT
- (18) DEFECTIVE CONTACTS
- (19) BURNED OUT
- (20) BEARING FAILURE
- (21) STRIPPED
- (22) STRUCTURAL FAILURE
- (23) IMPROPER ADJUSTMENT
- (24) MECHANICAL DAMAGE
- (25) BROKEN OR EXCESSIVE WEAR
- (26) BROKEN OR CRACKED
- (27) CRACKED
- (28) JAMMING
- (29) WORN EXCESSIVELY
- (30) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																	
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
27560000	1445	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	91	50	24	2	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-
	224	8	44	-	-	12	2	-	-	-	-	-	-	-	-	-	-	-	-
27612000	387	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27654000	15	-	-	33	-	-	-	40	-	-	-	-	-	-	-	-	-	-	-
	62	-	19	-	-	-	30	2	-	-	2	-	-	-	-	-	-	-	-
27718000	903	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27712000	157	6	19	-	-	1	25	1	1	2	-	-	-	38	-	13	-	-	-
27664000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	532	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
27834000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	-	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	62	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	18	17	-	-	-	-	55	11	-	-	-	-	-	-	-	-	-	-	-
	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	77	4	20	-	-	1	25	50	-	-	-	-	-	-	-	-	-	-	-
	15	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	264	16	34	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS INDICATORS

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																FAILURE MODES BY PERCENT OF TOTAL FAILURES			
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
37	27	27	5	3	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
44	-	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
102	-	43	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2859000	14	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2874000	17	18	29	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2882000	60	23	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2882400	109	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2886000	54	17	18	4	-	9	-	20	-	6	-	2	-	-	-	-	-	-	-	-	-
2888000	484	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28854000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28925000	101	43	8	-	-	-	-	25	-	1	-	-	-	-	-	-	-	-	-	-	-
28934000	157	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
33	21	49	-	-	-	-	-	15	3	-	-	-	-	-	-	-	-	-	-	-	-
797	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
29302000	119	47	8	-	2	-	29	4	-	-	-	-	-	-	-	-	-	-	-	-	-
29380000	54	-	27	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
245	51	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
31	13	32	-	-	3	7	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-

ROME AIR DEVELOPMENT CENTER, GRIFWISS AFB, N.Y. SEMICONDUCTOR PART FAILURE RATE DATA JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS INTERVALS

FAILURE MODES (O DENOTES PREDOMINANT FAILURE MODE)

- 11A INTERRUPTED
- 12A SHORTED
- 13 MECHANICAL BINDING
- 151 JUNKIER
- 152 UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES				
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)
20230000	20	14	7	10	3	66

HOME ELECTRONIC PART/FAILURE RATE DATA JANUARY 1968

HOME AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION 111 FAILURE MODE DISTRIBUTIONS

PART CLASS JACKSCREWS

FAILURE MODES 10 CEMOTES PREDOMINANT FAILURE MODES

- (1) WEAR OR AGEING EFFECTS
- (2) FAILED TO OPERATE
- (3) IMPROPER OPERATION
- (4) MECHANICAL DAMAGE
- (5) MECHANICAL INTERFERENCE

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES				
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)
21584001	-	10	10	30	40	10

HOME AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III - FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968

PART CLASS - JUNITES

FAILURE MODES TO DENOTES PREDOMINANT FAILURE MODES)

(1) LEAKAGE

(2) EXCESSIVE WEAR

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO. 3102000 5 90 20

HOME AIR DEVELOPMENT CENTER, CHIFFESS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      LAMPS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)  
 (1) OPEN FILAMENTS

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES(01)	PERCENT
2	100	
9	100	

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1960  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      LATCHES

FAILURE MODES (9 GENIES PRECONITANT FAILURE MODES)  
(1) EXCESSIVE WEAR

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES  
REF. NO.      FAILURES(10)  
22794300      6



HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS LIGHTS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) BINDING
- (2) BURNED OUT
- (3) BROKEN
- (4) MECHANICAL BINDING
- (5) CRACKED
- (6) PEELING
- (7) EXCESSIVE WEAR
- (8) DISTORTED
- (9) OPEN FILAMENT
- (10) GEARS JAMMED
- (11) INTERNAL SHORT
- (12) UNKNOWN

LOSS INDEX NO. OF  
REF. NO. FAILURES(1) (2) (3) (4) (5) (6) (7) (8) (9) (10) (11) (12)

4	25	-	-	-	-	-	-	-	-	-	-	75
34	-	-	23	-	-	27	-	-	-	-	0	50
7	-	-	43	-	-	14	-	-	-	-	-	43
-	-	-	-	-	-	-	-	-	-	-	-	-
213	-	93	7	-	-	-	-	-	-	-	-	-
51	-	-	24	-	-	-	2	-	-	-	-	-
7	-	-	100	-	-	-	-	-	-	-	-	-
18	-	67	26	5	-	-	-	-	-	-	-	-
37	-	41	27	-	32	-	-	-	-	-	-	-
1	-	-	-	-	100	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	0



ROME AIR DEVELOPMENT CENTER, GRIFELISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1966  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS LINES		FAILURE MODES (* DENOTES PREDOMINANT FAILURE MODE)									
		(1) BROKEN									
		(2) CRACKED									
		(3) LEAKING									
		(4) EXCESSIVE WEAR									
		(5) BROKEN OR CRACKED									
		(6) DISCOLORED									
		(7) UNKNOWN									
CROSS INDEX		FAILURE MODES BY PERCENT OF TOTAL FAILURES									
REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)			
	112	90	6	-	-	-	-	4			
	62	76	-	-	5	-	-	19			
59445000	7	71	29	-	-	-	-	-			
	10	-	-	-	-	60	10	30			
	25	48	12	20	-	-	-	20			

RUWE AIM DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      LINKAGES

FAILURE MODES (• DENOTES PREDOMINANT FAILURE MODE)

- (1) CRACKED
- (2) BINDING
- (3) OUT OF TOLERANCE
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX      NO. OF  
 REF. NO.      FAILURES (01) (02) (03) (04)  
 3260000      3      67      -      -      33  
                  15      -      67      33      -



BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NON-ELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      MANIFOLDS

FAILURE MODES (8 DENOTES PREDOMINANT FAILURE MODE)  
(1) CORRODED

CROSS INDEX REF. NO.	NO. OF FAILURES(1)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
1	100	

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS MODULATORS

FAILURE MODES (10 DEMOTES PREDOMINANT FAILURE MODE)

(1) IMPROPER OPERATION IN COLD

(2) ERRATIC MULL AND GAIN PHASE SHIFT

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES (1)	(2)
3	67	33

BOMC AIR DEVELOPMENT CENTER, GAITHERSBURG, M.D.  
 SECTION III. FAILURE MODE DISTRIBUTIONS  
 NON-ELECTRONIC PART FAILURE DATA JANUARY 1966

PART CLASS PART NO.

FAILURE MODES (% OF TOTAL)

- (1) OUT OF TOLERANCE
- (2) BROKEN
- (3) UNKNOWN

CROSS INDEX NO. OF  
 REF. NO. FAILURE (1) (2) (3)  
 30584000 13 37 15 40

FAILURE MODES BY PERCENT OF TOTAL FAILURES



NAME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS NON-ELECTRONIC PART FAILURE DATA

PART CLASS: MEDIUM GENERATORS

- FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)
- (1) WEARING CONTAMINATION OR LOSS OF LUBRICANT
  - (2) BRUSH BREAKAGE OR WEAR
  - (3) OPEN OR SHORTED MOTOR
  - (4) OPEN OR SHORTED STATOR
  - (5) COMMUTATOR FAILURE
  - (6) SHAFT FROZEN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES					
		(01)	(02)	(03)	(04)	(05)	(06)

2	-	-	-	-	-	-	100
48	28	8	10	14	40	-	-
	28	8	10	14	40	-	-



ROME AIR DEVELOPMENT CENTER, GRIFESS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS NUMBERS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) BENT
- (2) EXCESSIVE WEAR
- (3) CORRODED
- (4) FOREIGN OBJECT
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)
34110000	1	100	-	-	-	-

ARMC AIR DEVELOPMENT CENTER, GRIPPLISS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1966  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS NOZZLES

FAILURE MODES (O REMOVED PREDOMINANT FAILURE MODE)

- (1) BURNER
- (2) DISTORTED
- (3) CORRODED
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES (1)	(2)	(3)	(4)
REF. NO.	FAILURES	15	33	33	20
36384000	15	20	20	20	40



BOMC AIR DEVELOPMENT CENTER, GRIFEL'S AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION 111 FAILURE MODE DISTRIBUTIONS

PART CLASS    PANELS

FAILURE MODES (10 DEMOTES PREDOMINANT FAILURE MODE)  
 (1) STRUCTURAL FAILURE  
 (2) OPEN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX    NO. OF  
 REF. NO.    FAILURES (01) (02)  
 30780000    5    100    -    0

HOME AIR DEVELOPMENT CENTER, GRANTISS AFB, ALA.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1963

PART CLASS PARACHUTES

FAILURE MODES (9 DEDUTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) DISCLOSED
- (3) EXCESSIVE WEAR

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF. NO.	FAILURES (01) (02) (03)	
7	16	72
14		



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS PLUGS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)  
(1) LEAKING

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO. 10364000 1 100

HOME AIM DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.

SECTION III FAILURE MODE DISTRIBUTIONS

HOME ELECTRONIC PART FAILURE RATE DATA - JANUARY 1968

PART CLASS PJTENTIGMETERS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) OUT OF TOLERANCE
- (2) EXCESSIVE WEAR
- (3) BROKEN DISTORTED
- (4) OPEN
- (5) LEADS TOO SHORT
- (6) BROKEN
- (7) CORRODED
- (8) BINDING
- (9) MECHANICAL FAILURE
- (10) ARCHING
- (11) NOISY
- (12) BURNED OUT
- (13) INTERMITTENT
- (14) DIRTY
- (15) CHANGED VALVE
- (16) TEST ERROR
- (17) FAILED TO DEACTUATE
- (18) IMPROPER ADJUSTMENT
- (19) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
47014000	114	40	18	10	-	-	-	-	-	-	-	-	-	-	-	-	-	32
	15	53	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	47
47062000	17	32	-	-	75	25	-	-	-	-	-	-	-	-	-	-	-	-
	43	-	12	-	14	-	-	32	6	-	-	-	-	-	-	-	-	24
47066000	79	-	19	-	-	-	-	-	7	-	2	14	9	5	9	2	-	14
47060000	2	50	50	-	-	-	50	-	-	-	-	-	-	-	-	-	-	31
46980000	3	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
47012000	31	-	-	-	10	-	-	-	-	84	-	-	-	-	-	-	-	6
47016000	5	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20	40

BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS POWERSTATS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) PHYSICAL DAMAGE
- (2) BURNED OUT
- (3) SHORTED
- (4) DIMMING FUNCTION
- (5) UNKNOWN

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURES (01)	(02)	(03)	(04)	(05)
	25	52	12	4	20

NUMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1960  
 SECTION 111 FAILURE MODE DISTRIBUTIONS

PART CLASS PARTIES

FAILURE MODES (10 DENOTES PRECIPITANT FAILURE MODE)

- (11) OUT OF TOLERANCE
- (12) CORRODED / BROKEN / DISTORTED
- (13) BROKEN
- (14) WEAR / WEAR
- (15) CORRODED
- (16) CONTAMINATED
- (17) SMOOTED
- (18) LEAKING
- (19) DISTORTED
- (20) CRACKED
- (21) BROKEN / CRACKED
- (22) ERATIC / INTERMITTENT
- (23) CORRODED CONNECTIONS
- (24) RESISTANCE LOW
- (25) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES														
REF. NO.	FAILURES(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	
41204000	80	44	-	-	-	-	16	-	-	-	23	5	-	-	12	
41290000	62	79	-	-	5	-	-	9	-	-	-	-	-	-	7	
	50	71	-	5	2	-	-	-	-	-	-	-	-	-	24	
	8	100	-	-	-	-	-	-	-	-	-	-	-	-	-	
	106	80	-	-	2	-	8	-	-	-	-	-	-	-	10	
	119	75	-	-	-	4	12	-	-	-	-	-	-	-	9	
	89	76	-	-	-	2	8	-	-	-	-	-	-	-	14	
	54	69	-	-	17	-	-	-	-	6	-	-	-	-	8	
	92	78	-	5	-	-	9	-	-	-	-	-	-	-	10	
	15	60	-	-	-	-	-	7	7	-	-	-	-	-	24	
	78	68	-	-	5	-	-	-	-	-	-	-	-	-	27	
	152	68	11	-	-	-	-	-	-	-	-	-	-	-	21	
41202000	20	75	-	-	-	-	-	5	-	-	-	-	-	-	20	
	88	56	-	18	-	-	8	-	-	-	-	-	-	-	18	
41312000	8	-	-	50	-	-	-	-	-	-	13	-	12	25	-	



PART CLASS PUMPS

FAILURE MODES (0 DEMOTES PREDOMINANT FAILURE MODE)

- (1) CONTAMINATION
- (2) FAILED TO OPERATE
- (3) IMPROPER ADJUSTMENT
- (4) IMPROPER OPERATION
- (5) INTERMITTENT OPERATION
- (6) INTERNAL PART FAILURE
- (7) LEAKING
- (8) MECHANICAL DAMAGE
- (9) MECHANICAL INTERFERENCE
- (10) MISSING OR WRONG PART
- (11) SLOW OR SLUGGISH OPERATION
- (12) WEAR OR AGING EFFECT
- (13) BURNED OUT
- (14) CIRCUIT BREAKER TRIPS OUT
- (15) IMPROPER LUBRICATION
- (16) STRUCTURAL FAILURE
- (17) REGULATOR FLUCTUATIONS
- (18) BEARING FAILURE
- (19) DRIVE COUPLING MALFUNCTION
- (20) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
41102000	3	-	-	-	-	-	-	-	67	-	-	-	24	33	-	-	-	-	33	-	-
40065000	206	-	40	20	-	-	-	-	-	-	-	-	13	-	-	-	-	-	-	-	27
41072000	-	-	67	1	17	-	5	6	1	-	-	-	1	-	-	-	-	-	-	-	1
41138000	23	-	-	-	13	-	-	-	57	8	-	-	-	-	-	-	-	-	-	-	18
40428000	53	-	12	1	26	8	6	38	4	1	1	-	-	-	-	-	-	-	-	-	3
40422000	5	-	-	-	19	5	-	51	4	2	-	-	-	-	-	4	-	-	40	-	-
40510000	55	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39
41110000	7	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	1
40734000	24	-	40	1	20	1	5	33	-	1	1	1	-	-	-	-	-	-	-	-	21
40762000	-	-	-	-	-	-	-	54	-	-	-	-	25	-	-	-	-	-	27	-	1
1995	10	-	-	-	10	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16
40566000	10	-	-	-	10	10	-	-	-	-	-	-	25	-	-	-	10	-	-	-	28

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS PYLONS

FAILURE MODES 19 DENOTES PREDOMINANT FAILURE MODES

- (1) BROKEN
- (2) CRACKED
- (3) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES (1)	(2)	(3)
REF. NO.	FAILURES			
41356000	5	40	40	20
41358000	-	-	0	-

BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1948  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS RAUMONES

FAILURE MODES (• DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (2) CRACKED
- (3) EXCESSIVE WEAR
- (4) DISTORTED
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)
REF. NO.						
41776000	35	40	24	20	5	9

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      HOMELECTRONIC PART FAILURE RATE DATA      JANUARY 1964  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      RECEIPT CLASSES

FAILURE MODES TO DENOTES PREDOMINANT FAILURE MODES

- (1) PHYSICAL DAMAGE
- (2) BURNED OUT
- (3) INTERMITTENT
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES (1)	(2)	(3)	(4)
REF. NO.					
23	03	9	4	4	4

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1949  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS		RELAYS		FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)																			
CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																					
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
	455	2	17	10	-	-	-	4	1	1	3	-	1	-	2	-	-	-	-	1	5	-	49
	50	10	40	14	10	-	60	40	-	-	-	-	-	-	-	-	-	-	-	-	-	22	
4478000	10	-	11	-	-	-	33	-	-	-	-	-	-	-	-	-	-	-	56	-	-	-	
45640000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
46212000	-	-	-	-	-	-	80	20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
44880000	4	-	-	-	-	-	-	-	50	50	-	-	-	-	-	-	-	-	-	100	-	-	
2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	60	-	-	-	-	
44470000	5	-	40	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	25	
46220000	4	-	-	-	-	-	-	25	25	25	25	-	-	-	-	-	-	-	-	-	-	11	
101	6	62	9	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	-	-	-	-	-	22	78	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
-	4	24	-	65	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-	
-	2	22	-	73	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	
-	4	24	-	65	-	-	-	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-	
-	2	22	-	73	-	-	-	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-	
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BLM: AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY-1960  
 SECTION 111 FAILURE MODE DISTRIBUTIONS NON-ELECTRONIC PART FAILURE RATE DATA

PART CLASS RELAYS

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																		
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
		19	22	-	3	-	-	55	45	-	-	-	-	-	-	-	-	-	-	-
		34	42	-	1	-	-	-	-	-	54	2	-	-	-	-	-	-	-	-
		-	-	-	-	-	-	64	36	-	-	20	1	-	-	-	-	-	-	-
45596000		-	-	-	-	-	-	63	37	-	-	-	-	-	-	-	-	-	-	-
		4	24	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	22	-	73	-	-	-	-	-	1	6	-	-	-	-	-	-	-	-
		4	24	-	65	-	-	-	-	-	1	2	-	-	-	-	-	-	-	-
		2	22	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4	24	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	22	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4	24	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	22	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		4	24	-	65	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		2	22	-	73	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46064000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
45904000	4	-	-	-	-	-	59	34	-	-	-	-	-	-	-	-	-	-	-	-
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		-	-	-	-	-	76	24	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	79	21	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	76	24	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	76	24	-	-	-	-	-	-	-	-	-	-	-	-
18	-	6	17	-	-	-	-	11	-	-	-	-	-	-	-	-	-	-	-	-
2	50	50	-	-	-	-	-	-	-	-	5	-	-	-	-	-	-	-	-	-
37	5	3	-	-	-	-	-	3	22	-	-	-	-	-	-	-	-	-	-	-
4	-	-	-	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-	-	-
46214000	3	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
46214000	-	-	-	-	-	-	79	21	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	79	21	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	-	-	76	24	-	-	-	-	-	-	-	-	-	-	-	-
10	-	-	20	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-	-	-
46250000	27	5	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-
43444000	-	-	-	7	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-
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JANUARY 1960

NON-ELECTRONIC PART FAILURE RATE DATA

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, MS

SECTION III. FAILURE MODE DISTRIBUTIONS

PART CLASS RESERVOIRS

FAILURE MODES (0 DENOTES PRELIMINARY FAILURE MODE)

- (1) LEAKING
- (2) CRACKED
- (3) DAMAGED
- (4) EXCESSIVE WEAR
- (5) BROKEN
- (6) SCORED
- (7) CONTAMINATION
- (8) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	FAILURE MODES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
REF. NO.	FAILURES									
55752000	78	93	3	-	-	-	-	-	-	1
55760000	5	100	-	-	-	-	-	-	-	-
	2	-	50	-	50	-	-	-	-	-
55774000	153	-	-	-	30	5	34	-	31	-
	76	-	-	-	19	28	22	-	31	-
	34	-	21	-	-	-	-	-	79	-

NAME: AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

### SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS DECISIONS, VARIABLE

**FAILURE MODES 1\* DENOTES PREDOMINANT FAILURE MODE**

- (14) SHORT  
 (15) UPEN  
 (16) INTERMITTENT  
 (17) DRIFT  
 (18) MISALIGNED BLISSAGE  
 (19) HIGH RESISTANCE  
 (20) ACID  
 (21) WINDING

### FAILURE MODES BY PERCENT OF TOTAL FAILURES

EXCESS INDE-A	NO. OF	FAILURE MODES IN							
REF.NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
47154000	17	10	20	-	-	6	6	41	-
	200	1	6	10	82	-	-	-	2
	61	7	23	16	66	-	-	-	7



ROME AIR DEVELOPMENT CENTER, GRIFESS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS		RESOLVERS				
FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)						
(1) WEAK BRUSH PRESSURE						
(2) OPEN COMPENSATOR WINDING						
(3) TRIM RESISTOR OPEN						
(4) BRUSH MISALIGNMENT						
(5) MOTOR DISCONTINUITY						
CROSS INDEX	NO. OF	FAILURE MODES % PERCENT OF TOTAL FAILURES				
REF. NO.	FAILURE(S)	(01)	(02)	(03)	(04)	(05)
	10	50	20	10	10	10

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1960  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS KWS

FAILURE MODES (1) DENOTES PREDOMINANT FAILURE MODES  
(11) FAILED DURING SPREAD  
(12) CORRODED

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF-NO.	FAILURES(11) (12)	
4782300	2 50 50	

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS NUMBERS

FAILURE MODES (10 DEMOTES PREDOMINANT FAILURE MODE)

- (1) SKIN FEELING
- (2) CORRODED
- (3) DISTORTED
- (4) BROKEN
- (5) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)
REF. NO.						
48272000	108	33	23	15	12	17

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DAY- JANUARY 1968  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SUBGROUPS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)  
(1) CRACKED OR BROKEN  
(2) COLLAPSED

GROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF-NO.	FAILURES(01) (02)	
9	89	
	11	

JANUARY 1948

NON-ELECTRONIC PART FAILURE RATE DATA

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SCREENS

FAILURE MODES IN DENOTES PREDOMINANT FAILURE MODES

- (1) BROKEN
- (2) LEAKING
- (3) FROZEN
- (4) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF				
REF. NO.	FAILURES	(Q1)	(Q2)	(Q3)	(Q4)
4838000	2	50	-	-	50
4839000	2	-	50	50	-
	1	-	100	-	-

BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS NON-ELECTRONIC PART FAILURE DATE DATA

PART CLASS SEALS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) LEAKING
- (2) PHYSICAL DAMAGE
- (3) TORN
- (4) CUT
- (5) DETERIORATED
- (6) LOST IN FLIGHT
- (7) FRAVED
- (8) BROKEN
- (9) EXCESSIVE WEAR
- (10) DISTORTED
- (11) TORN/LOOSE
- (12) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES												
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
10618000	15	45	55	-	-	-	-	-	-	-	-	-	-	-
10544000	15	-	-	-	-	-	-	-	-	-	-	-	-	-
10696000	6	83	-	-	-	-	-	-	-	-	-	-	-	-
	107	-	-	32	23	42	2	1	-	-	-	-	-	17
	5	-	100	-	-	-	-	-	-	-	-	-	-	-
	25	-	-	-	-	-	-	-	59	9	9	5	-	18
10290000	4	100	-	-	-	-	-	-	-	-	-	-	-	-
	29	-	-	90	-	-	-	-	-	-	-	-	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS		SEATS				
FAILURE MODES (• DENOTES PRECIPITANT FAILURE MODE)						
(1) CORRODED						
(2) DAMAGED						
(3) HANDLE LOOSE						
(4) BROKEN						
(5) UNKNOWN						
CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES				
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)
	6	50	16	16	-	18

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SENSORS

FAILURE MODES (0 DEMOTES PREDOMINANT FAILURE MODE)

- (1) CRACKED
- (2) CORRODED
- (3) LEAKING
- (4) ERRATIC
- (5) SHORTED
- (6) OPEN
- (7) BROKEN
- (8) BURNED OUT
- (9) INTERMITTENT
- (10) INCORRECT OUTPUT
- (11) IMPROPER ADJUSTMENT
- (12) CONTAMINATION
- (13) MECHANICAL DAMAGE
- (14) LOW RESISTANCE
- (15) BROKEN
- (16) UNKNOWN

CROSS INDEX REF-NO.	NO. OF FAILURES(01)	FAILURE MODES BY PERCENT OF TOTAL FAILURES													
		(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)
58756000	37	-	-	-	-	-	-	-	-	-	38	-	-	25	27
	2	50	50	-	-	-	-	-	-	-	81	4	2	-	13
	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
58960000	27	-	-	50	50	-	-	-	-	-	-	-	-	100	-
58990000	14	-	-	-	19	22	18	4	-	-	-	-	-	-	27
	80	-	-	-	-	-	29	-	-	-	-	-	-	-	71
		-	-	-	-	4	-	17	6	10	-	-	-	-	63



ADPC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

**PART CLASS SWAFIS**

**FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)**

**(1) CRACKED**

## WEAR SMITING WEAR (77)

SMITHSONIAN INSTITUTION

**038077 (4)**

### FAILURE MODES BY PERCENT OF TOTAL FAILURES

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ADONE AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968  
SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      WILDAIS

FAILURE MODES (O DENOTES PREDOMINANT FAILURE MODE)  
(1) CRACKED

CROSS INDEX      NO. OF      FAILURE MODES BY PERCENT OF TOTAL FAILURES  
REF. NO.      FAILURES(1)  
4896600      0

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SHROUDS

FAILURE MODES (• DENOTES PREDOMINANT FAILURE MODE)

(1) CRACKED

(2) DISTORTED

(3) BROKEN

(4) PART MISSING

(5) BROKEN OR CRACKED

(6) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES	(1)	(2)	(3)	(4)	(5)	(6)
15	60	27	-	-	-	-	13
3	-	-	67	-	-	-	33
49026000	55	-	44	-	-	26	30

ADONIS AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS MICRELS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

(1) OUT OF TOLERANCE

(2) DISTORTED

(3) CRACKED

(4) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES			
REP. NO.	FAILURES	(01)	(02)	(03)	(04)
2256002	29	32	27	14	26

BOMC AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS NONELECTRONIC PART FAILURE RATE DATA

PART CLASS		FAILURE MODES BY PERCENT OF TOTAL FAILURES				
		FAILURE MODES (* DENOTES PREDOMINANT FAILURE MODE)				
		FAILURE MODES				
		(1) BURNED OUT	(2) MECHANICAL BINDING	(3) SHORTED	(4) SPRING TENSION LOW	(5) UNKNOWN
CROSS INDEX	NO. OF					
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)
49832000	4	25	50	-	-	25
49834000	3	-	-	33	-	67
49836000	3	-	-	33	33	34

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NONELECTRONIC PART; FAILURE RATE DATA JANUARY 1960  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SPRINGS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) BROKEN
- (4) DISTORTED OR SCORED
- (3) OUT OF TOLERANCE
- (5) WORN EXCESSIVELY
- (2) WEAR
- (6) UNKNOWN

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO.	FAILURE (01)	(02)	(03)	(04)	(05)	(06)
2310000	3	67	-	-	33	-
2320000	2	-	-	-	100	-
2321000	27	46	15	-	-	39
2309000	2	50	-	-	50	-

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS STABILIZERS

FAILURE MODES (0 DEMOTES PREDOMINANT FAILURE MODE)  
(1) CRACKED

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO. FAILURE(S)  
49962000 - 0

ROME AIR DEVELOPMENT CENTER, GRIFPSS AFB, N.Y.  
 SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE DATA

JANUARY 1960

PART CLASS STARTERS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) ELECTRICAL
- (2) SHEARED DRIVE COUPLING
- (3) INOPERATIVE
- (4) STARTERS
- (5) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES				
REF. NO.	FAILURE(S)	(01)	(02)	(03)	(04)	(05)
50050000	101	32	32	24	-	12
50110000	-	-	-	-	0	-



ROME AIR DEVELOPMENT CENTER, GRIFELISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS STOPS

FAILURE MODES (10 DENOTES PREDOMINANT FAILURE MODE)  
 (1) CORRODED

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES
REF. NO.	FAILURES(1)	
22146000	8	100

ROME AIR DEVELOPMENT CENTER, GAITHERSBURG, M.D.  
 SECTION III FAILURE MODE DISTRIBUTIONS  
 JANUARY 1968

PART CLASS STRAINERS

FAILURE MODES (10 DENOTES PREDOMINANT FAILURE MODE)  
 (1) LEAKING  
 (4) UNKNOWN

CROSS INDEX NO. OF  
 REF. NO. FAILURES (1) (2)

1 100  
 2 50 50

FAILURE MODES BY PERCENT OF TOTAL FAILURES

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE DATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS STRUTS

FAILURE MODES (% DENOTES PREDOMINANT FAILURE MODE)	
(1) LEAKING	
(2) CORRODED	
(3) SCORED	
(4) OUT OF TOLERANCE	
(5) BROKEN	
(6) AXLE DAMAGE	
(7) DISTORTED	
(8) CRACKED	
(9) EXCESSIVE WEAR	
(10) UNKNOWN	

FAILURE MODES BY PERCENT OF TOTAL FAILURES	
CROSS INDEX REF. NO.	NO. OF FAILURES (01) (02) (03) (04) (05) (06) (07) (08) (09) (10)
50304000	5 - - - 40 40 - - - 20
	3 - - - 67 - - - 33 -
50316000	449 39 21 9 - - - - 100 -
	299 15 - - 22 - - 20 - 43
50334000	338 25 - - 6 17 6 - - 46

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION 111 FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS SUPPORTS

FAILURE MODES (2 DENIES PREDOMINANT FAILURE MODE)  
(1) SCORING

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

REF. NO. 50486000

ROME AIR DEVELOPMENT CENTER, GRIFISS AFB, N.Y. NONELECTRONIC PART FAILURE RATE DATA JANUARY 1948  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS SYNCHROS

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) MECHANICAL FAILURE
- (2) INTERMITTENT
- (3) OUT OF TOLERANCE
- (4) INCORRECT OUTPUT
- (5) OPEN
- (6) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX NO. OF

REF. NO. 55258000 28 14 11 18 14 14 1041

ROME AIR DEVELOPMENT CENTER, GAIFFISS AFB, N.Y.  
 SECTION III FAILURE MODE DISTRIBUTIONS  
 NONE ELECTRONIC PART FAILURE RATE DATA  
 JANUARY 1966

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## PARI CLASS SWITCHES

### FAILURE MODES (• DENTIST'S PREDOMINANT FAILURE MODE)

FAILURE MODES TO REMEDIES (PREDOMINANT FAILURE MODES)

111	CONTAMINATION
141	FAILED TO OPERATE
121	IMPROPER ADJUSTMENT
15A	IMPROPER OPERATION
15B	INTERMITTENT OPERATION
16A	INTERNAL PART FAILURE
17A	LEAKING
18A	MECHANICAL DAMAGE
19A	MECHANICAL INTERFERENCE
11A1	MISSING OR WRONG PART
1111	SLOW OR SLUGGISH OPERATION
1121	WEAR OR AGING EFFECT
1131	ARCING
115A	DRIFT/UNSTABLE/ERRATIC
115B	DEFECTIVE CONTACTS
1161	OPEN
1171	SHORTED
11A1	SQUIN FAILED TO FIRE
1191	VOLTAGE OUT OF SPEC
1201	DIELECTRIC HUMIDITY
1211	UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES																				
		(Q1)	(Q2)	(Q3)	(Q4)	(Q5)	(Q6)	(Q7)	(Q8)	(Q9)	(Q10)	(Q11)	(Q12)	(Q13)	(Q14)	(Q15)	(Q16)	(Q17)	(Q18)	(Q19)	(Q20)	(Q21)
	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51484000	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
54482000	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	79	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57410000	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
51422000	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52408000	58	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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**ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.**  
**SECTION II - FAILURE MODE DISTRIBUTIONS**

**NAME** **DEVELOPMENT CENTER** **UNITED STATES DISTRICT COURT**

**PART CLASS SWITCHES**

[illegible]

ROME AIR DEVELOPMENT CENTER, GRAFFESS AFB, N.Y.  
 SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE DATE DATA

JANUARY 1968

PART CLASS TALKMETERS

FAILURE MODES (10) DOMINANT PREDOMINANT FAILURE MODES

- (1) ARC
- (2) CRACK
- (3) OPEN
- (4) WELD
- (5) SHORT
- (6) LEAKING

MODE NO.	FAILURE MODES (10)	(11)	(12)	(13)	(14)	(15)	(16)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
1	ARC	25	35	10	15	7	8	
2	CRACK	23	43	13	14	4	3	



ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS		FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)									
		11) LEAKING									
		12) CRACKED									
		13) PUNCTURED									
		14) BURST									
		15) PRESSURE ERRATIC									
		16) UNKNOWN									
GROSS INDEX REF. NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES									
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)
	31	00	-	-	-	-	-	-	-	-	-
	13	85	-	-	-	-	15	-	-	-	-
	15	53	20	-	-	-	27	-	-	-	-
	7	85	-	-	-	-	15	-	-	-	-
56Q2000	3	-	-	33	33	-	33	-	-	-	-
5605600	1	-	-	-	-	100	-	-	-	-	-
5615000	-	0	-	-	-	-	-	-	-	-	-
5616000	-	-	-	-	-	-	-	-	-	-	-

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
 SECTION III FAILURE MODE DISTRIBUTIONS  
 PART CLASS THERMOSTATS  
 SEMIELECTRONIC PART FAILURE RATE DATA JANUARY 1960

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)  
 (1) OUTPUT LOW  
 (2) ERRATIC  
 (3) OUT OF ADJUSTMENT  
 (4) STICKING  
 (5) DRIFT  
 (6) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES					
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)
43164000	57	30	5	7	2	-	56
43202000	2	-	-	-	-	-	-
43204000	14	-	-	-	-	100	-
43206000	6	-	-	-	-	100	-
43208000	14	-	-	-	-	100	-
43206000	3	100	-	-	-	-	-

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1948  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS TIMERS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) INOPERATIVE
- (2) CYCLE TO LONG OR CONTINUOUS RUNNING
- (3) LEAKING
- (4) OUT OF TOLERANCE
- (5) ADJUSTMENT
- (6) CRACKED
- (7) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF							
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)
56444000	12	33	25	4	-	-	-	34
	72	-	-	-	63	-	-	37

BOMC AIR DEVELOPMENT CENTER, CRIPPLISS AFB, N.Y.  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS JAMES

FAILURE MODES TO DENOTES PREDOMINANT FAILURE MODES

- (1) CUTS
- (2) HIGH EXCESSIVELY
- (3) UNKNOWN

FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF			
REF. NO.	FAILURES(01)	(02)	(03)	
	406	25	21	54
5644000	2432	43	31	4
5644000	-	0	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968  
 SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS		TRANSUCERS																				
FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)																						
FAILURE MODES BY PERCENT OF TOTAL FAILURES																						
CROSS INDEX REF. NO.		NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
50456000		30	34	33	3	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	20
		124	6	-	-	-	-	1	-	-	-	1	-	44	-	15	-	3	-	-	-	8
		80	23	-	-	-	-	-	-	-	-	-	-	30	-	35	-	2	-	-	-	9
		-	-	-	-	-	1	69	8	22	-	-	-	-	-	-	-	-	-	-	-	-
		-	-	-	2	-	22	-	10	7	-	59	-	-	-	-	-	-	-	-	-	-
		-	-	-	1	-	32	-	18	1	-	48	-	-	-	-	-	-	-	-	-	-
		102	2	-	-	-	-	-	-	-	-	-	-	-	-	-	2	76	2	4	7	-
		71	5	-	-	-	1	-	10	-	-	-	2	-	-	-	4	43	-	4	16	-
		25	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	6	46	-	14	-
		70	1	-	-	-	-	-	-	-	-	-	-	-	-	-	8	36	52	-	-	4
99		70	1	-	-	-	-	-	-	-	-	-	3	-	1	4	41	10	23	-	-	17
		99	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	28
		-	-	-	-	-	-	-	-	-	-	-	-	-	72	-	-	-	-	-	-	-
		-	-	-	-	-	-	42	8	25	-	25	-	-	-	-	-	-	-	-	-	-
1		-	-	-	-	-	-	57	2	34	-	7	-	-	-	-	-	-	-	-	-	-
		1	-	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-	-	-	100

ADONE AIR DEVELOPMENT CENTER, GAITHERSBURG, M.D.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1960  
 SECTION III      FAILURE MODE DISTRIBUTIONS

PART CLASS      TRANSMISSIONS

FAILURE MODES IN DENOTES PREDOMINANT FAILURE MODES

- (1) INTERNAL FAILURES
- (2) STRUCTURE DAMAGE
- (3) DAMAGE OF SHAFT
- (4) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES			
REF. NO.	FAILURES	(01)	(02)	(03)	(04)
215	49	21	21	2	



ROME AIR DEVELOPMENT CENTER, GRIPPLS AFB, N.Y. NOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS TRANSMITTERS

FAILURE MODES (+ DENOTES PREDOMINANT FAILURE MODE)

- (1) ERRATIC
- (2) OUT OF TOLERANCE
- (3) LEAKING
- (4) MECHANICAL BINDING
- (5) BURNED OUT
- (6) BROKEN
- (7) SHORTED
- (8) INCORRECT OUTPUT
- (9) EXCESSIVE WEAR
- (10) BROKEN, DISTORTED
- (11) DIAPHRAGM RUPTURED
- (12) VIBRATION FATIGUE
- (13) UNKNOWN

CROSS INDEX REF. NO.	NO. OF FAILURES(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)
127	3	33	-	-	-	-	-	-	-	-	-	-	67
	10	30	30	-	-	-	-	-	-	-	-	-	40
57994000	18	50	5	17	11	-	-	-	-	-	-	-	17
	34	17	9	-	13	3	-	-	-	-	-	-	56
58214000	-	-	-	-	-	-	-	-	-	-	-	-	-
58244000	66	27	41	12	9	2	-	-	-	-	-	-	9
	448	-	43	-	-	-	-	7	4	-	-	-	46
58256000	-	-	-	-	8	-	-	-	-	-	-	-	-
58258000	-	-	-	-	-	-	-	-	-	-	-	-	-
58264000	42	10	33	7	14	-	7	-	-	-	-	-	29
58196000	-	-	-	-	-	-	-	-	-	-	-	-	-
	527	-	36	-	-	-	-	-	-	-	-	-	45
	254	-	46	24	-	-	-	-	19	-	-	-	30
58324000	67	52	-	-	-	-	-	14	-	-	-	-	34

ROME AIA DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1960

SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS TRANSMITTERS-RECEIVERS

FAILURE MODES (a) DENOTES PREDOMINANT FAILURE MODE)

- (1) FRAVED WIRING
- (4) BURNED OUT
- (3) INTERMITTENT
- (4) SHORTED
- (5) STRUCTURAL DAMAGE
- (6) UNKNOWN

CROSS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES					
REF. NO.	FAILURES	(01)	(02)	(03)	(04)	(05)	(06)
33	21	18	4	4	9	40	





HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS TUBES, ELECTRON

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)

- (1) SHORT
- (2) OPEN
- (3) DRIET
- (4) MECHANICAL DAMAGE
- (5) GAS
- (6) NOISE
- (7) ELECTRICAL LEAKAGE
- (8) UNSTABLE
- (9) LEAK
- (10) ARC
- (11) UNKNOWN

CROSS INDEX NO. OF FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)
132	26	7	31	4	14	4	1	-	-	-	-	11
2460	13	5	42	1	4	11	1	-	-	-	-	3
-	15	20	30	-	-	-	-	25	10	-	-	-
-	19	26	19	-	-	-	-	32	4	-	-	-
98	13	38	26	10	5	1	-	-	-	-	-	7
108	13	30	29	6	7	1	-	-	-	-	-	14
-	22	17	-	-	-	-	-	50	-	-	11	-
559	8	10	74	3	2	2	-	-	-	-	-	1



HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS VALVES

FAILURE MODES (C) DENOTES PREDOMINANT FAILURE MODE

FAILURE MODES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
(1) CONTAMINATION																					
(2) FAILED TO OPERATE																					
(3) IMPROPER OPERATION																					
(4) IMPROPER ADJUSTMENT																					
(5) INTERMITTENT OPERATION																					
(6) INTERNAL PART FAILURE																					
(7) LEAKING																					
(8) MECHANICAL DAMAGE																					
(9) MECHANICAL INTERFERENCE																					
(10) WEAR OR AGING EFFECT																					
(11) MISSING OR WRONG PART																					
(12) SLOW OR SLUGGISH OPERATION																					
(13) ELECTRICAL																					
(14) OPEN																					
(15) SHORT																					
(16) SOLENOID FAILURE																					
(17) OUT OF TOLERANCE																					
(18) MECHANICAL BINDING																					
(19) METAL FATIGUE																					
(20) MISCELLANEOUS																					
(21) UNKNOWN																					

CROSS INDEX REF. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
60378000	1																					
60376000	1																					
65310000	4																					
67174000	7																					
60384000	6																					
60500000	65																					
60510000	2																					
60516000	6																					
60862000	2																					
61292000	56																					
61346000	1																					
61690000	4																					
61764000	54																					
61754000	2																					

# NON-ELECTRONIC PART FAILURE RATE DATA

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ROME AIR DEVELOPMENT CENTER, GAITHERSBURG, M.D.  
SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1949

PART CLASS VALVES

CLASS INDEX	NO. OF	FAILURE MODES BY PERCENT OF TOTAL FAILURES																		
REF. NO.	FAILURE(S)	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)
6630000	2	-	-	50	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6639000	9	-	-	21	17	2	3	6	43	2	3	-	1	-	-	-	-	-	-	-
	-	-	-	12	40	1	1	7	33	3	3	-	1	1	-	-	-	-	-	-
	-	-	-	1	2	8	1	1	2	80	2	1	-	-	-	-	-	-	-	-
66152000	75	1	-	-	-	-	-	-	-	83	17	-	-	-	-	-	-	-	-	-
	370	-	-	16	-	-	-	-	-	48	7	-	-	-	-	-	-	-	-	-
	18	-	-	-	29	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-
	14	-	-	-	-	-	-	-	-	42	17	-	-	-	-	-	-	-	-	-
	17	-	-	-	7	-	-	-	-	86	-	-	-	-	-	-	-	-	-	-
	70	-	-	-	48	-	-	-	-	42	17	-	-	-	-	-	-	-	-	-
66700000	3	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-
	117	-	-	-	10	-	-	-	-	50	5	-	-	-	-	-	-	-	-	-
	117	-	-	-	18	-	-	-	-	50	5	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	80	-	20	-	-	-	-	-	-	-	-
66756000	70	-	-	-	49	-	-	-	-	30	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	57	14	-	-	-	-	-	-	-	-	-
	6	-	-	-	17	-	-	-	-	50	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	34	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-
	28	-	-	-	11	-	-	-	-	32	-	-	-	-	-	-	-	-	-	-
312	-	13	-	-	-	-	-	-	-	27	-	-	-	-	-	-	-	11	-	-
15	-	-	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-
42	-	-	-	-	-	-	-	-	-	45	-	-	-	-	-	-	-	-	-	-
102	12	-	-	-	-	-	-	-	-	56	-	-	-	-	-	-	-	-	-	-
77	12	-	-	-	-	-	-	-	-	38	-	-	-	-	-	-	-	7	-	-
66858000	13	-	-	-	-	-	-	-	-	54	-	-	-	-	-	-	-	-	-	-
	80	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	16	-	-
372	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	52	-	-
352	-	-	-	-	-	-	-	-	-	9	-	-	-	-	-	-	-	52	-	-
553	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	53	-	-
66902000	52	-	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-	-	-	-
	20	-	-	11	-	-	-	-	-	59	-	-	-	-	-	-	-	11	-	-
	23	-	-	-	-	-	-	-	-	96	-	-	-	-	-	-	-	-	-	-
66404000	80	-	-	-	-	-	-	-	-	30	-	-	-	-	-	-	-	18	-	-
	72	-	-	-	-	-	-	-	-	85	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
67442000	23	-	-	-	-	-	-	-	-	43	4	9	-	-	-	-	-	-	-	-
	34	-	-	25	-	11	-	-	-	8	3	-	-	-	-	-	-	-	-	-
	30	-	-	-	-	-	-	-	-	80	-	-	-	-	-	-	-	3	-	-
	140	-	-	-	-	-	-	-	-	89	2	2	-	-	-	-	-	-	-	-

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y. JANUARY 1963  
 SECTION III FAILURE MODE DISTRIBUTIONS NON-ELECTRONIC PART FAILURE RATE DATA

PART CLASS VALVES

CROSS INDEX REF. NO.	NO. OF FAILURES (01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
65060000	97	-	-	-	-	-	-	37	-	12	-	-	-	-	-	-	13	-	-	20	38
	300	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-
	7	-	-	-	-	-	-	69	-	8	-	-	-	-	-	-	-	-	-	17	6
	16	-	-	-	-	-	-	94	-	-	-	-	-	-	-	-	-	-	-	-	29
	58	-	-	-	-	-	-	55	-	16	-	-	-	-	-	-	-	-	-	-	4
	-	-	-	-	-	-	-	1	80	2	2	4	-	-	-	-	-	-	-	-	36
63494000	14	-	-	-	-	-	-	43	-	21	-	-	-	-	-	-	-	-	-	-	49
	8	-	-	-	-	-	-	-	25	-	-	-	-	-	-	-	-	-	-	-	-
67250000	2	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-
67280000	5	-	-	-	-	-	-	60	20	-	-	-	-	-	-	-	-	-	-	-	-
67312000	9	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-
	111	-	-	-	-	-	-	40	-	13	-	-	-	-	-	-	-	-	-	-	44
67308000	8	-	-	-	-	-	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-
	111	-	-	-	-	-	-	40	-	13	-	-	-	-	-	-	-	-	-	-	-
	166	-	-	-	-	-	-	89	-	-	-	-	-	-	-	-	-	-	-	-	9
	49	-	-	-	-	-	-	66	-	-	-	-	-	-	-	-	-	-	-	-	34
	39	-	-	-	-	-	-	64	-	8	-	-	-	-	-	-	-	-	-	-	25
	-	-	-	-	-	-	-	4	3	-	-	-	-	-	-	-	-	-	-	-	1
	-	-	-	-	-	-	-	4	1	17	2	1	-	-	-	-	-	-	-	-	2
	-	-	-	-	-	-	-	4	7	20	1	1	-	-	-	-	-	-	-	-	1
	-	-	-	-	-	-	-	1	5	7	2	5	1	-	-	-	-	-	-	-	7
	-	-	-	-	-	-	-	1	5	8	7	3	-	-	-	-	-	-	-	-	57
	-	-	-	-	-	-	-	1	14	9	17	-	-	-	-	-	-	-	-	-	31
	-	-	-	-	-	-	-	15	-	-	-	-	-	-	-	-	-	-	-	-	11
	-	-	-	-	-	-	-	8	-	-	-	-	-	-	-	-	-	-	-	-	46
	-	-	-	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	35
	-	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-	-	-	-	15
	-	-	-	-	-	-	-	43	-	-	-	-	-	-	-	-	-	-	-	-	15
	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	20
	-	-	-	-	-	-	-	20	-	-	-	-	-	-	-	-	-	-	-	-	20
	-	-	-	-	-	-	-	14	-	-	-	-	-	-	-	-	-	-	-	-	46
67464000	56	-	-	-	-	-	-	66	-	-	-	-	-	-	-	-	-	-	-	-	3
	7	-	-	-	-	-	-	29	-	-	-	-	-	-	-	-	-	-	-	-	25
	17	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-
	-	-	-	-	-	-	-	13	-	24	18	-	-	-	-	-	-	-	-	-	24
	-	-	-	-	-	-	-	13	-	10	-	-	-	-	-	-	-	-	-	-	40
	-	-	-	-	-	-	-	13	-	20	-	-	-	-	-	-	-	-	-	-	8
	-	-	-	-	-	-	-	13	-	50	-	-	-	-	-	-	-	-	-	-	75
	-	-	-	-	-	-	-	69	-	15	-	-	-	-	-	-	-	-	-	-	27
	-	-	-	-	-	-	-	55	-	6	19	-	-	-	-	-	-	-	-	-	10
	-	-	-	-	-	-	-	50	-	20	10	-	-	-	-	-	-	-	-	-	8
	-	-	-	-	-	-	-	13	-	21	-	-	-	-	-	-	-	-	-	-	94
67422000	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63614000	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63772000	13	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63884000	32	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
63960000	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

HOME AIR DEVELOPMENT CENTER, ORIPWISS, APR. 1949.  
SECTION 111 FAILURE MODE DISTRIBUTIONS

NONFUNCTIONAL PART FAILURE DATE DATA JANUARY 1949

PART CLASS VALUES

CROSS INDEX RIP-NO.	NO. OF FAILURES	FAILURE MODES BY PERCENT OF TOTAL FAILURES															
		(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)	(09)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
64-04-0000	22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	35	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	28	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	52	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	14	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
64-04-0000	33	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-





# HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.      NONELECTRONIC PART FAILURE RATE DATA      JANUARY 1968

## SECTION III FAILURE MODE DISTRIBUTIONS

PART CLASS    WHEELS

FAILURE MODES (\* DENOTES PREDOMINANT FAILURE MODE)

- (1) CRACKED
- (2) DISTORTED
- (3) BROKEN
- (4) EXCESSIVE WEAR
- (5) STRUCTURAL DAMAGE
- (6) LACK OF LUBRICATION
- (7) BEARING FAILURE
- (8) UNKNOWN

### FAILURE MODES BY PERCENT OF TOTAL FAILURES

CROSS INDEX	NO. OF	(01)	(02)	(03)	(04)	(05)	(06)	(07)	(08)
REF. NO.	FAILURES								
68094000	15	-	-	-	-	60	13	13	14
68088000	20	-	-	-	-	100	-	-	-
	37	-	-	16	24	-	-	-	62
68116000	1325	44	31	-	-	-	-	-	25

ARMY AIR DEVELOPMENT CENTER, GRIPPISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

NON-ELECTRONIC PART FAILURE RATE DATA JANUARY 1968

PART CLASS JINCHES

FAILURE MODES (0 DENOTES PREDOMINANT FAILURE MODE)  
(1) JAMMED

CROSS INDEX NO. OF  
REP. NO. FAILURES(01)  
00000000

FAILURE MODES BY PERCENT OF TOTAL FAILURES

HOME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1960

PART CLASS WINDOWS

FAILURE MODES (10 DENOTES PREDOMINANT FAILURE MODE)  
(1) HELICOPTER

CROSS INDEX NO. OF  
REF. NO. FAILURES(1)  
60370000

FAILURE MODES BY PERCENT OF TOTAL FAILURES

ROME AIR DEVELOPMENT CENTER, GRIFFISS AFB, N.Y.  
SECTION III FAILURE MODE DISTRIBUTIONS

HOMELECTRONIC PART FAILURE RATE DATA JANUARY 1968

PART CLASS WINDSHIELDS

FAILURE MODES (1) DENOTES PREDOMINANT FAILURE MODE)

- (1) CRACKED
- (2) BROKEN
- (3) SCORED
- (4) UNKNOWN

CROSS TIMEA REP. NO.	NO. OF FAILURES	(01)	(02)	(03)	(04)	FAILURE MODES BY PERCENT OF TOTAL FAILURES
25	00	13	7	-	-	
74	73	14	6	7	-	